FIRE PREVENTION STANDARDS

Subject: **Civil Drawing Notes - Commercial** Number: 441.1051 Date: **October 2001**

I. Objective: To provide standard notes for Civil Drawings

II. Procedure: **The following information must be reproduced as "Sacramento Metropolitan Fire District Notes" for Commercial Building Projects:**

1. The required fire flow for protection of the proposed project is XXXX gallons per minute (GPM), at 20 pounds per square inch (psi), for a duration of X hours. This flow is based on the premise that the structure is to be of Type XXXX construction of not more than XXXXX total square feet with installation of a full coverage automatic fire sprinkler system if required. This required fire flow is in addition to any domestic water demands. A change in any of these conditions may increase or decrease the required fire flow.
2. Provide a letter from the water district indicating that they can provide the required "fire flow".
3. Required fire access lanes shall be installed, identified and approved prior to construction or storage of combustible material to the "first lift" (Up to the last 1" of pavement). The fire access lanes shall be designed to meet the requirements for an assumed traffic index of 5.5 (two inches of asphalt concrete on six inches of aggregate base).
4. The following methods of fire lane identification are taken from section 22500.1 of the California Vehicle Code and amended by fire district policy. One of the three methods presented below must be present for all areas designated as a fire access lane:
   A. Posting of a sign every 25' along and immediately adjacent to, and visible from, the designated fire lane clearly stating in letters not less than one inch in height that the place is a fire lane and no parking is permitted.
   B. By outlining or painting the pavement red with approved pavement paint and, in contrasting color, marking the pavement every 25' with words "FIRE LANE – NO PARKING" which are clearly visible from a vehicle.
   C. By a red curb or red paint on the edge of the roadway upon which is clearly marked every 25' with the words "FIRE LANE – NO PARKING".
5. Required fire hydrants capable of providing the required fire flow shall be installed, tested and approved prior to any construction or storage of combustible material.
6. Fire hydrants shall be spaced so that a fire hydrant will be available within 150 feet of any portion of the required fire lane.
7. The following information applies to the installation of private fire hydrants and fire sprinkler supply piping:

A. Prior to installation, the installing contractor **shall submit under separate application and permit, a schematic drawing** showing the part by part installation arrangement of all underground piping and appurtenances, including the manufacturer's data sheets and a parts list with the listing numbers. The approved civil drawing, alone, does not meet this requirement.

B. Fire hydrants shall meet the following minimum requirements unless the water purveyor having jurisdiction has a specific hydrant requirement:

   i. Hydrants shall have a .9 coefficient of discharge or greater and with a maximum head loss of 2 psi at 1000 gpm. Provide specification sheet to plan review section prior to installation.

   ii. Outlets shall be national standard thread with one 4.5 inch and two 2.5 inch outlets.

   iii. Hydrants to be painted Rustoleum® white or equal.

   iv. Spacing is a maximum of 300 feet on center.

C. Fire hydrants shall be located within eight (8) feet of the fire access lane with the 4-½ inch outlet facing the fire access lane. The bottom flange is to be installed a minimum of two (2) inches above the finished grade. The centerline of the 4½-inch discharge outlet is to be a minimum of eighteen (18) inches above the finished grade.

D. All runs of non-metallic water pipe, including services, shall have a No. 12 gauge solid soft drawn copper wire laid along the pipe to facilitate locating the pipe at a later date. The wire shall be stubbed up inside each valve box. Continuity test shall be conducted on each splice at all locations.

E. All above ground valves for controlling the water supply for on-site fire hydrants and automatic sprinkler systems shall be electrically supervised.

F. Plastic piping approved for underground installations shall be PVC, C900, Class 150 or greater, and be listed for such use.

G. All piping shall be laid in a six inch (6") bed of sand or natural gravel not over one inch in diameter and have a twelve inch (12") fill of sand or natural gravel not over one inch in diameter. Provide a trench section on the plans.

H. All fasteners (nuts, bolts, etc.) shall be cleaned and coated with a bituminous corrosion retarding material after installation and prior to inspection. Fittings or fasteners shall not be wrapped or covered with plastic or covered with concrete.

I. Concrete thrust blocks or other approved retaining, shall be installed at all locations where piping changes direction.

J. A 200-PSI hydrostatic pressure test shall be performed on all installed piping and appurtenances for a period of two hours. The piping shall be center-loaded during pressure testing with all joints, fittings and

appurtenances uncovered. Failure to comply with this section will result in the uncovering of the piping for visual inspection.

K. A fire sprinkler system flush, using a full pipe diameter discharge, shall be conducted and witnessed by the fire district prior to connection to the above ground fire sprinkler system. The fire department connection piping shall also be flushed if connected to the fire sprinkler supply piping below grade. Piping shall be flushed until all foreign objects have been discharged and water is clear.

L. Fire hydrant piping shall be flushed from the 4½-inch outlet on all hydrants.

8. The contractor shall place a “Blue Dot” reflective marker in the center of the fire lane adjacent to each fire hydrant.

9. Any gates or barriers across fire access lanes will require a separate plan submittal and approval prior to installation.